

STATEMENT OF CHANGES IN BENEFICIAL OWNERSHIP

Check this box if no longer subject to Section 16. Form 4 or Form 5 obligations may continue. See Instruction 1(b).

Filed pursuant to Section 16(a) of the Securities Exchange Act of 1934 or Section 30(h) of the Investment Company Act of 1940

| OMB APPROVAL | |
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| | | |
|--|---|--|
| 1. Name and Address of Reporting Person* <u>Discovery Group I, LLC</u> (Last) (First) (Middle) <u>191 N. WACKER DRIVE SUITE 1685</u> (Street) <u>CHICAGO IL 60606</u> (City) (State) (Zip) | 2. Issuer Name and Ticker or Trading Symbol <u>AtriCure, Inc. [ATRC]</u> | 5. Relationship of Reporting Person(s) to Issuer (Check all applicable) Director <input checked="" type="checkbox"/> 10% Owner Officer (give title below) Other (specify below) |
| | 3. Date of Earliest Transaction (Month/Day/Year) <u>03/09/2011</u> | |
| | 4. If Amendment, Date of Original Filed (Month/Day/Year) | 6. Individual or Joint/Group Filing (Check Applicable Line) <input checked="" type="checkbox"/> Form filed by One Reporting Person <input type="checkbox"/> Form filed by More than One Reporting Person |

Table I - Non-Derivative Securities Acquired, Disposed of, or Beneficially Owned

| 1. Title of Security (Instr. 3) | 2. Transaction Date (Month/Day/Year) | 2A. Deemed Execution Date, if any (Month/Day/Year) | 3. Transaction Code (Instr. 8) | | 4. Securities Acquired (A) or Disposed Of (D) (Instr. 3, 4 and 5) | | | 5. Amount of Securities Beneficially Owned Following Reported Transaction(s) (Instr. 3 and 4) | 6. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 7. Nature of Indirect Beneficial Ownership (Instr. 4) |
|---------------------------------|--------------------------------------|--|--------------------------------|---|---|------------|-------------------------|---|--|--|
| | | | Code | V | Amount | (A) or (D) | Price | | | |
| Common Stock | 03/09/2011 | | P | | 1,760 ⁽¹⁾ | A | \$9.859 ⁽³⁾ | 1,566,857 | I | By Discovery Equity Partners, L.P. ⁽¹⁾ |
| Common Stock | 03/09/2011 | | P | | 287 ⁽²⁾ | A | \$9.859 ⁽³⁾ | 265,473 | I | By Pleiades Investment Partners - D, L.P. ⁽²⁾ |
| Common Stock | 03/10/2011 | | P | | 3,735 ⁽¹⁾ | A | \$9.5102 ⁽⁴⁾ | 1,570,592 | I | By Discovery Equity Partners, L.P. ⁽¹⁾ |
| Common Stock | 03/10/2011 | | P | | 608 ⁽²⁾ | A | \$9.5102 ⁽⁴⁾ | 266,081 | I | By Pleiades Investment Partners - D, L.P. ⁽²⁾ |
| Common Stock | 03/11/2011 | | P | | 4,300 ⁽¹⁾ | A | \$9.6496 ⁽⁵⁾ | 1,574,892 | I | By Discovery Equity Partners, L.P. ⁽¹⁾ |
| Common Stock | 03/11/2011 | | P | | 700 ⁽²⁾ | A | \$9.6496 ⁽⁵⁾ | 266,781 | I | By Pleiades Investment Partners - D, L.P. ⁽²⁾ |

Table II - Derivative Securities Acquired, Disposed of, or Beneficially Owned (e.g., puts, calls, warrants, options, convertible securities)

| 1. Title of Derivative Security (Instr. 3) | 2. Conversion or Exercise Price of Derivative Security | 3. Transaction Date (Month/Day/Year) | 3A. Deemed Execution Date, if any (Month/Day/Year) | 4. Transaction Code (Instr. 8) | | 5. Number of Derivative Securities Acquired (A) or Disposed of (D) (Instr. 3, 4 and 5) | | 6. Date Exercisable and Expiration Date (Month/Day/Year) | | 7. Title and Amount of Securities Underlying Derivative Security (Instr. 3 and 4) | 8. Price of Derivative Security (Instr. 5) | 9. Number of derivative Securities Beneficially Owned Following Reported Transaction(s) (Instr. 4) | 10. Ownership Form: Direct (D) or Indirect (I) (Instr. 4) | 11. Nature of Indirect Beneficial Ownership (Instr. 4) |
|--|--|--------------------------------------|--|--------------------------------|---|--|-----|--|-----------------|---|--|--|---|--|
| | | | | Code | V | (A) | (D) | Date Exercisable | Expiration Date | | | | | |

1. Name and Address of Reporting Person*

Discovery Group I, LLC

(Last) (First) (Middle)

191 N. WACKER DRIVE SUITE 1685

(Street)

CHICAGO IL 60606

(City) (State) (Zip)

1. Name and Address of Reporting Person*

Donoghue Daniel J

(Last) (First) (Middle)

C/O DISCOVERY GROUP I, LLC
191 N. WACKER DRIVE SUITE 1685

(Street)

CHICAGO IL 60606

(City) (State) (Zip)

1. Name and Address of Reporting Person*

Murphy Michael R

(Last) (First) (Middle)

C/O DISCOVERY GROUP I, LLC
191 N. WACKER DRIVE SUITE 1685

(Street)

CHICAGO IL 60606

(City) (State) (Zip)

Explanation of Responses:

1. Discovery Group I, LLC is the General Partner of Discovery Equity Partners, L.P., which is a discretionary client of the reporting person, that owns the reported securities. The reporting person disclaims beneficial ownership of the reported securities except to the extent of its pecuniary interest therein.
2. Discovery Group I, LLC is an investment manager for Pleiades Investment Partners - D, L.P., which is a discretionary client of the reporting person, that owns the reported securities. The reporting person disclaims beneficial ownership of the reported securities except to the extent of its pecuniary interest therein.
3. This transaction was executed in multiple trades at prices ranging from \$9.85 - 9.895. The price reported above reflects the weighted average purchase price. The reporting person hereby undertakes to provide upon request to the SEC staff, the issuer or a security holder of the issuer full information regarding the number of shares and prices at which the transaction was effected
4. This transaction was executed in multiple trades at prices ranging from \$9.50 - 9.60. The price reported above reflects the weighted average purchase price. The reporting person hereby undertakes to provide upon request to the SEC staff, the issuer or a security holder of the issuer full information regarding the number of shares and prices at which the transaction was effected
5. This transaction was executed in multiple trades at prices ranging from \$9.63 - 9.65. The price reported above reflects the weighted average purchase price. The reporting person hereby undertakes to provide upon request to the SEC staff, the issuer or a security holder of the issuer full information regarding the number of shares and prices at which the transaction was effected

Remarks:

Michael R. Murphy and Daniel J. Donoghue are managing members of Discovery Group I, LLC, and each disclaims beneficial ownership of the reported securities except to the extent of his pecuniary interest therein.

Michael R. Murphy, Managing 03/11/2011
Director

Daniel J. Donoghue 03/11/2011

Michael R. Murphy 03/11/2011

** Signature of Reporting Person Date

Reminder: Report on a separate line for each class of securities beneficially owned directly or indirectly.

* If the form is filed by more than one reporting person, see Instruction 4 (b)(v).

** Intentional misstatements or omissions of facts constitute Federal Criminal Violations See 18 U.S.C. 1001 and 15 U.S.C. 78ff(a).

Note: File three copies of this Form, one of which must be manually signed. If space is insufficient, see Instruction 6 for procedure.

Persons who respond to the collection of information contained in this form are not required to respond unless the form displays a currently valid OMB Number.